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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,368

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Hiroaki Koshima

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08/04/2011

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EXAMINER

GOLOBOY, JAMES C

ART UNIT

PAPER NUMBER

1771

NOTIFICATION DATE

DELIVERY MODE

08/04/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/561,368	<b>Applicant(s)</b> KOSHIMA ET AL.	
	<b>Examiner</b> JAMES GOLOBOY	<b>Art Unit</b> 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,6,11-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 11-13, 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Applicant's amendments filed 3/30/10 overcome the rejection over set forth over Meyer alone in the office action mailed 12/30/09. The rejection over Meyer and Harrison is applied to claims previously rejected over Meyer alone. The rejection over Tiffany and Meyer is maintained and additionally applied to claim 11. A new objection necessitated by the amendment is set forth below. Newly added claim 15 is also set forth below.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/30/10 has been entered.

### ***Claim Objections***

3. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1, from which claim 6 depends, has been amended to require that the compound have a linear alkenyl or alkyl group having 6 to 30 carbon atoms, as recited in claim 6. While claim 6 further

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recites that the alkenyl or alkyl group is bonded at an end or intermediate portion of the group, there are no other ways in which the group could possibly be bonded, and the limitation does not effect the scope of the claim. Claim 6 therefore fails to further limit amended claim 1.

***Claim Rejections - 35 USC § 103***

4. Claims 1-3, 6, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer in view of Harrison.

In column 1 lines 56-63, Meyer discloses a detergent that is a mixture of N-substituted imides derived from adducts of maleic anhydride and olefins, which are then further reacted with amines. In columns 2-3 Meyer discloses that the maleic anhydride adducts have alkenyl groups of between 10 and 30 carbon atoms, within the range recited for reactant (a) of claim 1 and claim 6. In column 3 lines 30-34 Meyer discloses that 32 to 60% of the total olefin content is branched, implying that the remainder are linear, as recited in amended claim 1. In column 4 lines 8-47, Meyer discloses that the amine mixture contains aminoethylpiperazine, meeting the limitations of the ring-terminated amine of reactant (b) of claim 1 as well as claims 2-3. Examples 1-7 in columns 6-8 discloses the preparation of additives meeting the limitations of claims 1-3.

In Tables I, VII, and VIII, Meyer discloses that some of the alkenyl substituents of the succinimide have more than 30 carbon atoms. The succinimide products with these alkenyl substituents will have a number of within the range recited in claim 12 carbon atoms 12. The differences between Meyer and the currently presented claims are:

i) Meyer does not disclose a mole percentage of polyalkylenepolyamine having a ring structure at an end within the range recited in claim 1.

ii) Meyer does not disclose the incorporation of the lubricating additive into a transmission fluid. This relates to claims 1 and 11.

With respect to i), Attention is drawn to the sample amine mixtures in Table IX (column 6 lines 34-47), which contain aminoethylpiperazine. While Meyer discloses the concentration in terms of weight percentage instead of mole percentage, it is clear that the amine mixtures in Table IX will meet the concentration limitation of reactant (b) of claim 1, as the “higher oligomers” that make up a large portion of the amine mixtures will have a higher molecular weight than the aminoethylpiperazine, and the mole percentage of aminoethylpiperazine in the mixtures will be greater than the weight percentage. The mole percentage of aminoethylpiperazine in the “Amine-A” mixture of Meyer will therefore overlap the range recited in claim 1. See MPEP 2144.05(I): “In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976);”

With respect to ii), Harrison, in the abstract, discloses a low molecular weight branched alkenyl succinimide, where the alkenyl group comprises 8 to 32 carbon atoms, similar to that of Meyer. In paragraphs 111-117 Harrison discloses the amines used to prepare the succinimide, including substituted piperazines (paragraph 115). In paragraph 186 Harrison teaches that the additive is useful in automatic or continuously variable transmission fluids, as recited in claims 1 and 11. The use of the succinimides

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of Meyer as the succinic acid derivatives in the transmission fluids of Harrison meets the limitations of claims 1 and 11.

It would have been obvious to one of ordinary skill in the art to use the succinimides of Meyer in the transmission fluid compositions of Harrison, as Harrison teaches that low molecular weight succinimides containing a ring structure are useful in such compositions.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer in view of Harrison as applied to claims 1-3, 6, 11-12 above, and further in view of Ohtani (U.S. Pat. No. 5,441,656).

The discussion of Meyer in view of Harrison in paragraph 4 is incorporated here by reference. Meyer and Harrison disclose an automatic transmission composition meeting the limitations of claim 1, and Harrison teaches in paragraph 190 that other well-known additives can be included in the composition, but does specifically disclose the additives recited in newly added claim 15.

Ohtani discloses in column 4 lines 38-45 that automatic transmission fluids normally contain antiwear additives and viscosity index improvers, as recited in claim 15. It would have been obvious to one of ordinary skill in the art to include the antiwear additives and viscosity index improvers Ohtani in the composition of Meyer and Harrison as Ohtani teaches that they are typical additives for automatic transmission fluids.

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6. Claims 1-3, 6, 11-13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiffany in view of Meyer.

Tiffany discloses a lubricating composition comprising a succinimide dispersant substituted by a C<sub>20</sub>-C<sub>60</sub> olefin (column 5 lines 45-67), overlapping the range recited for the R<sup>1</sup> group of claim 1, and a second succinimide dispersant substituted by a C<sub>60</sub>-C<sub>350</sub> hydrocarbyl group (column 8 lines 49-65), overlapping the range recited for component (B) of claim 12. In the table in column 12, Tiffany discloses that the two succinimides are added to the composition in similar amounts, and the relative concentrations therefore meet the limitations of claim 13. In column 10 line 62-63 Tiffany discloses that the compositions can be automatic transmission fluids as recited in amended claim 1. In the table in column 12 Tiffany discloses that the compositions can comprise antiwear agents, as recited in claim 15. Tiffany does not specifically disclose a succinimide formed from a polyalkylenepolyamine having a ring structure.

The discussion of Meyer in paragraph 4 above is incorporated here by reference. Meyer discloses a succinimide dispersant with a similar molecular weight to the low molecular weight succinimide of Tiffany and meeting the limitations of the succinimide of claim 1. The use of the succinimide dispersant of Meyer as the low molecular weight dispersant in the composition of Tiffany meets the limitations of claims 1-3, 6, and 12-13. Additionally, while Tiffany does not specifically disclose a continuously variable transmission fluid, it is the examiner's position that as the composition meets the compositional limitations of the claims and is useful as an automatic transmission fluid, it will also be useful in a continuously variable transmission as recited in claim 11.

It would have been obvious to one of ordinary skill in the art to include the dispersant of Meyer as the low molecular weight dispersant in the composition of Tiffany, as Tiffany teaches that the composition can be added directly to the fuel and Meyer teaches that the dispersant is also an effective detergent in fuels.

### ***Response to Arguments***

7. Applicant's arguments filed 3/30/10 have been fully considered but they are not persuasive. Applicant argues that Tiffany fails to disclose a composition for an automatic transmission fluid, but as discussed above Tiffany discloses automatic transmission fluids in column 10 lines 62-63. Applicant argues that Meyer and Harrison do not disclose succinimide compound where R<sup>1</sup> is a linear alkenyl or alkyl group, but as discussed above Meyer teaches that 32 to 60% of the olefins are branched, implying that linear olefins are also present.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES GOLOBOY whose telephone number is (571)272-2476. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James Goloboy/  
Examiner, Art Unit 1771